

WHAT IS CLAIMED IS:

1. An all-terrain vehicle comprising at least two track assemblies to support the all-terrain vehicle onto a ground surface, each one of said at least two track assemblies comprising:

5 a longitudinal endless track belt provided with an inner surface provided with a plurality of inner lugs and an outer surface provided with a plurality of external lugs;

 a mounting structure to mount said longitudinal endless track belt to said vehicle,

10 wherein, when mounted to said mounting structure, said longitudinal endless track belt has a punctually localized surface contact with the ground surface.

 2. An all-terrain vehicle according to claim 1, wherein said longitudinal endless track belt has an overall transversal profile generally
15 convex.

 3. An all-terrain vehicle according to claim 2, wherein said plurality of external lugs form a lug arrangement comprising at least two successive transverse rows of lugs arranged in a staggered relationship.

 4. An all-terrain vehicle according to claim 3, wherein said lug
20 arrangement comprises a first row of lugs and a second row of lugs, said first row of lugs being arranged in a first sequence comprising a first lateral lug, a central lug and a second lateral lug; said second row of lugs being arranged in a second sequence comprising a first intermediate lug, a first external lug and a second intermediate lug.

 5. An all-terrain vehicle according to claim 1, wherein said
25 mounting structure includes a track driving wheel provided with equidistant

2025-10-23 10:23:00

teeth contacting the inner surface of the endless track belt, said teeth being so located as to cooperate in a meshing engagement with said inner lugs of the endless track belt.

5 6. An all-terrain vehicle according to claim 5, wherein said mounting structure further includes an inside idler wheel and an outside idler wheel in contact with said endless track belt, and at least one interconnecting arm between said track driving wheel and said idler wheels.

10 7. An all-terrain vehicle according to claim 5, wherein said track driving wheel includes a first mounting plate and a second mounting plate mounted thereto by a bolt and spacer assembly supporting said teeth.

8. An all-terrain vehicle according to claim 6, wherein said track driving wheel is mounted to a hub of the all-terrain vehicle.

15 9. An all-terrain vehicle according to claim 6, wherein each one of said inside idler wheel and said outside idler wheel includes a peripheral portion in contact with said internal surface of the endless track belt.

20 10. An all-terrain vehicle according to claim 6, wherein said at least one interconnecting arm comprises an angled connecting element provided with a short arm having a free end to which said inside idler wheel is rotatably mounted and a long arm having a free end to which said outside idler wheel is rotatably mounted.

25 11. An all-terrain vehicle according to claim 10, wherein said at least one interconnecting arm further includes an elbowed connection element interconnecting said inside idler wheel and said outside idler wheel, whereby said inside idler wheel is rotatably mounted to a first end of said elbowed connection element while said outside idler wheel is rotatably mounted to a second end thereof.

12. An all-terrain vehicle according to claim 11, wherein said endless track belt is under a tension that may be adjusted by a tension adjusting assembly mounted to said at least one interconnecting arm.

13. An all-terrain vehicle according to claim 12, wherein said
5 tension adjusting assembly includes:

a cam element rotatably and slidably mounted to a slotted aperture of said at least one interconnecting arm; and

a pin fixedly mounted to said at least one interconnecting arm to contact the cam element;

10 wherein one of said inside and outside idler wheels is so rotatably mounted to said cam elements as to be moved by a rotation of said cam element, thereby adjusting the tension of said endless track belt.

14. An endless track belt assembly comprising:

a track driving wheel provided with a plurality of teeth;

15 an endless track belt provided with an inner surface having a plurality of inner lugs and an outer surface having a plurality of external lugs, said endless track belt being wound around said track driving wheel;

20 wherein a) said teeth are so spaced that a distance between two consecutive teeth spans a distance separating two consecutive inner lugs of said endless track belt and b) said endless track belt, when mounted to said track driving wheel, has a punctually localized contact with a ground surface.

15. An all-terrain vehicle according to claim 14, wherein said endless track belt assembly further comprises:

an inside idler wheel;

25 an outside idler wheel;

at least one interconnecting arm between said track driving wheel and said idler wheels;

wherein the endless track belt is wound around said inside idler wheel and said outside idler wheel.

16. An endless track belt assembly according to claim 14,
5 wherein said track driving wheel is mounted to a hub of an all-terrain vehicle.

17. An endless track belt assembly according to claim 15,
wherein each one of said inside idler wheel and said outside idler wheel
includes a peripheral portion in contact with said internal surface of the endless
track belt.

10 18. An endless track belt assembly according to claim 15,
wherein said at least one interconnecting arm comprises an angled connecting
element provided with a short arm having a free end to which said inside idler
wheel is rotatably mounted and a long arm having a free end to which said
outside idler wheel is rotatably mounted.

15 19. An endless track belt assembly according to claim 18,
wherein said inside idler wheel and said outside idler wheel are further
connected by an elbowed connection element, whereby said inside idler wheel
is rotatably mounted to a first end of said elbowed connection element while
said outside idler wheel is rotatably mounted to a second end thereof.

20 20. An endless track belt assembly according to claim 15,
wherein said endless track belt is under a tension that may be adjusted by a
tension adjusting assembly mounted to said at least one interconnecting arm.

21. An all-terrain vehicle according to claim 20, wherein said
tension adjusting assembly includes:

25 a cam element rotatably and slidably mounted to a slotted
aperture of said at least one interconnecting arm; and

a pin fixedly mounted to said at least one interconnecting arm to contact the cam element;

wherein one of said inside and outside idler wheels is so rotatably mounted to said cam elements as to be moved by a rotation of said cam element, thereby adjusting the tension of said endless track belt.

22. A method for mounting an endless track belt on a all-terrain vehicle, comprising the acts of:

providing an endless track belt having inner lugs and external lugs;

providing a track driving wheel having a plurality of teeth so spaced that a distance between two consecutive of the plurality of teeth spans a distance separating two consecutive of a plurality of inner lugs of the endless track belt;

interconnecting the track driving wheel to an inside idler wheel and to an outside idler wheel; and

tensioning the endless track belt around the track driving wheel, the inside idler wheel and the outside idler wheel so that the endless track belt has a punctually localized surface contact with a ground surface.